REMARKS

This Amendment is submitted in response to the Official Letter dated October 15, 2004. Favorable reconsideration of the application, as amended, is respectfully requested.

Applicant acknowledges with thanks the Examiner's allowance of Claims 15 through 22. New Claim 24 is added by this Amendment. Claims 1 through 24 are now pending in the Application.

Amendments to the Specification

The Examiner indicates that the headings "BRIEF SUMMARY OF THE INVENTION", "BRIEF DESCRIPTION OF THE DRAWINGS", "DETAILED DESCRIPTION OF THE INVENTION", and "CLAIMS" are not present, and requires correction.

Applicant refers the Examiner to the Preliminary Amendment filed with the Application, noting that the headings "SUMMARY OF THE INVENTION", "BRIEF DESCRIPTION OF THE DRAWINGS", and "DETAILED DESCRIPTION OF THE INVENTION" were added to the Specification by this Preliminary Amendment. Applicant further notes that the heading "Patent Claims" was provided in the original application. In the accompanying amendment, the two of these headings not already in the preferred form are amended to conform to the preferred form, as required by the Examiner. Applicant notes that this is a minor editorial correction. No narrowing of the scope of the application is intended by these amendments, and such amendments were not made for reasons of patentability. Accordingly, Applicant continues to assert the full range of protection available under the Doctrine of Equivalents

Amendments to the Claims

Claims 1 and 23 have been amended to add a colon (":") following the preamble. Applicant notes that these amendments to Claims 1 and 23 are minor editorial corrections. Additionally, new Claim 24 has been added. No narrowing of the scope of the application is intended by these amendments, and such amendments were not made for reasons of

patentability. Accordingly, Applicant continues to assert the full range of protection available under the Doctrine of Equivalents

Claim Rejections - 35 U.S.C. § 102

The Examiner rejected Claims 1 through 14 and 23 under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. No. 6,244,295 to Bartussek et al. The device described by Bartussek et al. is a check valve having a tubular valve housing 12. A bore 16 is formed through the housing 12 with a valve seat 18 formed therein in the form of a shoulder. A valve ball 22 is movably disposed in the bore 16, and is urged into engagement with the valve seat 18 by a spring 30. The spring 30 acts between the ball 22 and a perforated disk 26 that is press fit into the bore 16 (in the embodiment of Fig. 1) or captured therein by deforming the valve body 12 radially inwardly by the exertion of force from the outside (column 4, lines 57-60).

Bartussek et al. describe that both the perforated disc 26 (i.e., the "inner component") and the valve housing 12 (i.e., the "outer component") may be made from either a metal or an injection-molded plastic (see column 2, lines 62-64 and column 4, lines 11-13). Importantly, however, there is no description or teaching in this prior art that the inner component and outer component should be made from *mutually different* materials. Furthermore, contrary to the assertion of the Examiner, there is also no hint or suggestion that their respective materials should have different coefficients of thermal expansion, as is recited in each of Applicant's four independent claims, Claim 1, 15, 23, and 24. On the contrary, the suggestion seems to be that the inner and outer components of the valve assembly described by Bartussek et al. would be made of the same material - selected from either a metal or an injection-molded plastic - and the inner and outer components would thus have the same coefficient of expansion.

Secondly, in the embodiment illustrated in Fig. 4 of the citation (and referred to by the Examiner) the "inner component" 26 is secured within the end of the "outer component" 12 by the application of compressive forces in the direction of arrows 46, those forces plastically deforming the walls of the valve housing 12 inwardly around the perforated disc 26. Claim 1 of the present application, on the other hand, defines a positive engagement between the inner component and the outer component formed by a

thermally induced flow of the inner component into the internal-diameter enlargement of the outer component.

With the composite of the present invention, there is no inward crushing of the outer component around the inner component. It is simply the greater capacity for thermal expansion of the inner component of the composite that gives rise to the positive engagement of the inner component into the inwardly directed enlargement of the outer component. Thus, the present invention has absolutely no association with the concept of plastically deforming the outer component to secure the inner component therein.

In the most recent Office Action, the Examiner admits that the reference is silent as to the specific plastic or metal to be used. The Examiner then uses this lack of disclosure in an argument to say, essentially, that since the reference didn't specifically teach away from the invention, the invention is therefore taught by the reference. This is a non sequitur. Furthermore, Applicant notes that the Examiner has made an *entirely unwarranted* assumption, saying "Since metals and plastics inherently have different coefficients of thermal expansion, this combination would arrive at Applicant's claimed invention." That this assumption is unwarranted is shown by the following example of a plastic and a metal with similar coefficients of expansion.

Applicant encloses herewith a data sheet (labeled Attachment A, which was copied from the internet URL http://www.quadrantepp.matweb.com/SpecificMaterialNew.asp?bassnum=P1SM02&group=General). On that data sheet, the metric coefficient of expansion for a plastic material called Celazole® PBI (polybenzimidazole) is given as 0.23×10^{-4}/degree K.

This is exactly the same coefficient of expansion as that for Aluminum given in the attached table (labeled Attachment B, copied from the internet URL http://www.efunda.com/materials/common_matl/Common_Matl.cfm?MatlPhase=Solid&MatlProp=Thermal#Thermal), which coefficient of expansion is given as 23×10^{-6} /degree C (equivalent to 0.23×10^{-4}/degree K).

Thus, it is clear that the assumption by the Examiner is incorrect, as the coefficient of expansion for the plastic material, polybenzimidazole, is exactly the same as that of the metal, aluminum. Accordingly, the mere recitation of the use of different materials in Bartussek et al. does not teach or suggest the use of materials with different coefficients of

expansion, since different materials can have the same coefficient of expansion, contrary to the unwarranted assumption by the Examiner.

It is clear that there is *no* teaching of providing materials with different coefficients of expansion in Bartussek et al., and thus there is no teaching of the invention. Furthermore, Bartussek et al. has no reason to teach providing materials with different coefficients of expansion to hold components together, since Bartussek et al. expressly teaches the application of force from the outside to deform the valve housing. It appears that the Examiner has, unwittingly and impermissibly, used hindsight to attempt to combine an unwarranted and erroneous assumption with a not terribly relevant reference to arrive at Applicant's invention.

Furthermore, even if Bartussek et al. did use materials with different coefficients of expansion to achieve the structure recited in Applicant's pending claims, such use would be accidental and unwitting, since this is not the process taught by Bartussek et al. for fixing the components together. Bartussek et al. clearly teaches *another* mechanism, the use of external force to deform the outer member onto the inner member for fixing the outer and inner members together. The Examiner admits that Bartussek et al. is silent as to the specific plastic or metal to be used. The only logical conclusion to draw is that Bartussek et al. did not intend to use differential expansion of components to fix the components together, did not appreciate that such an arrangement could negate the need to deform the outer member using an external force, and if by happenstance, a combination of materials were used that resulted in a favorable difference in expansion, such a result would be accidental, since there is no teaching to do so in the disclosure of Bartussek et al.. Under the law, such a result, *if it did occur*, does not anticipate Applicant's invention, and must be disregarded. (An accidental, unintended, and unappreciated production of the product or process in question does not constitute anticipation. Prior processes that achieved the patentee's results "accidentally and unwittingly" are to be disregarded. *Tilghman v. Proctor (102 U.S. 707, 26 L.Ed. 279 (1881)*. Prior accidental production of the same thing, when the character and function were not recognized until the invention of the later patent does not effect anticipation. *Munising Paper Co., Ltd., v. American Sulphite Pulp Co. (228 F. 700, 703 (6th Cir. 1915))*.

Accordingly, for all the above reasons, the Examiner is respectfully requested to reconsider and withdraw the rejections of Claims 1 - 14 and 23, and to issue a Notice of Allowance.